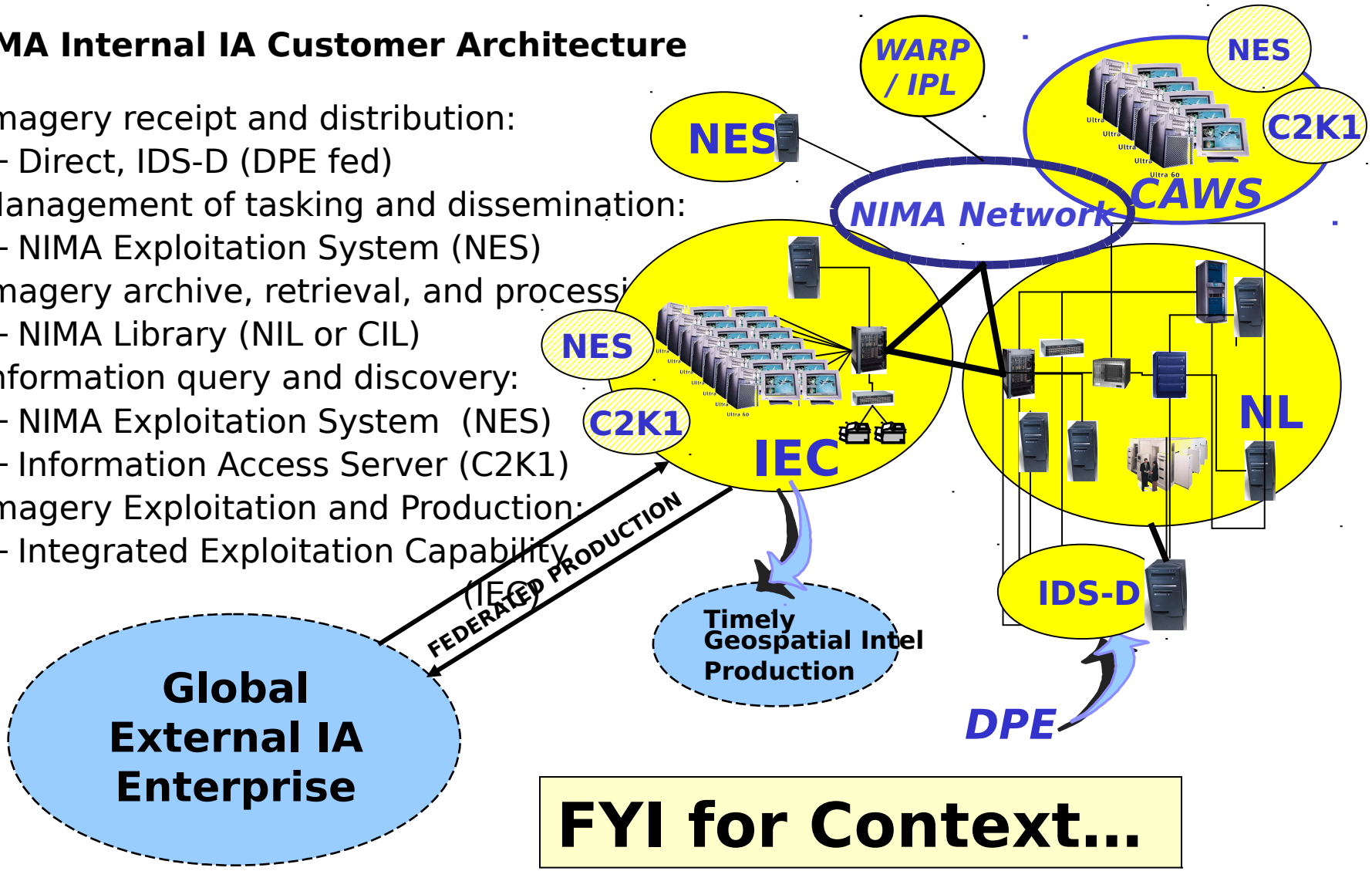
IEC Context – JP02 NIMA Internal IA Customers Overview

NIMA Internal IA Customer Architecture

- Imagery receipt and distribution:
  - Direct, IDS-D (DPE fed)
- Management of tasking and dissemination:
  - NIMA Exploitation System (NES)
- Imagery archive, retrieval, and processi
  - NIMA Library (NIL or CIL)
- Information query and discovery:
  - NIMA Exploitation System (NES)
  - Information Access Server (C2K1)
- Imagery Exploitation and Production:
  - Integrated Exploitation Capability (IEC)



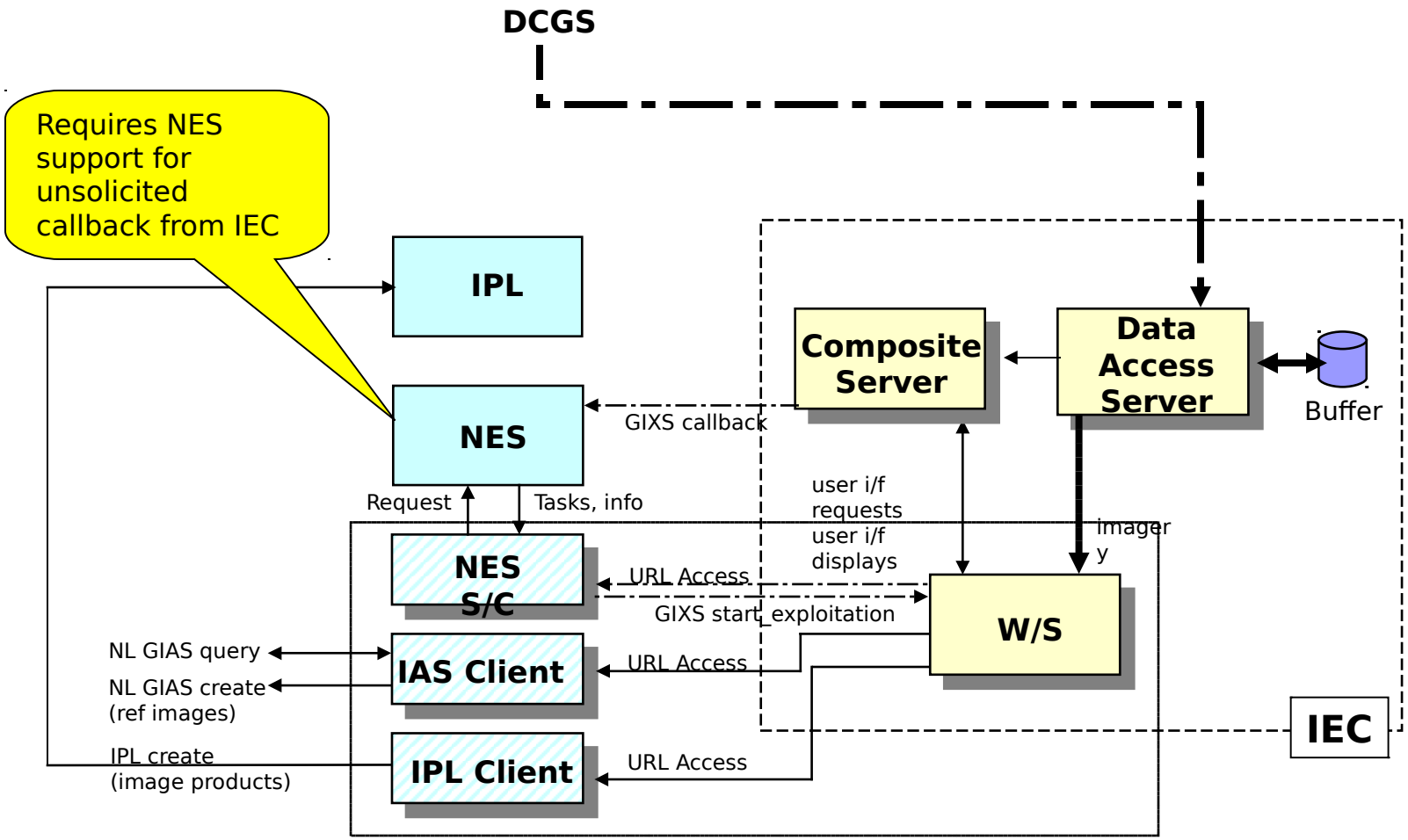
FYI for Context…

DCGS – IEC System Design

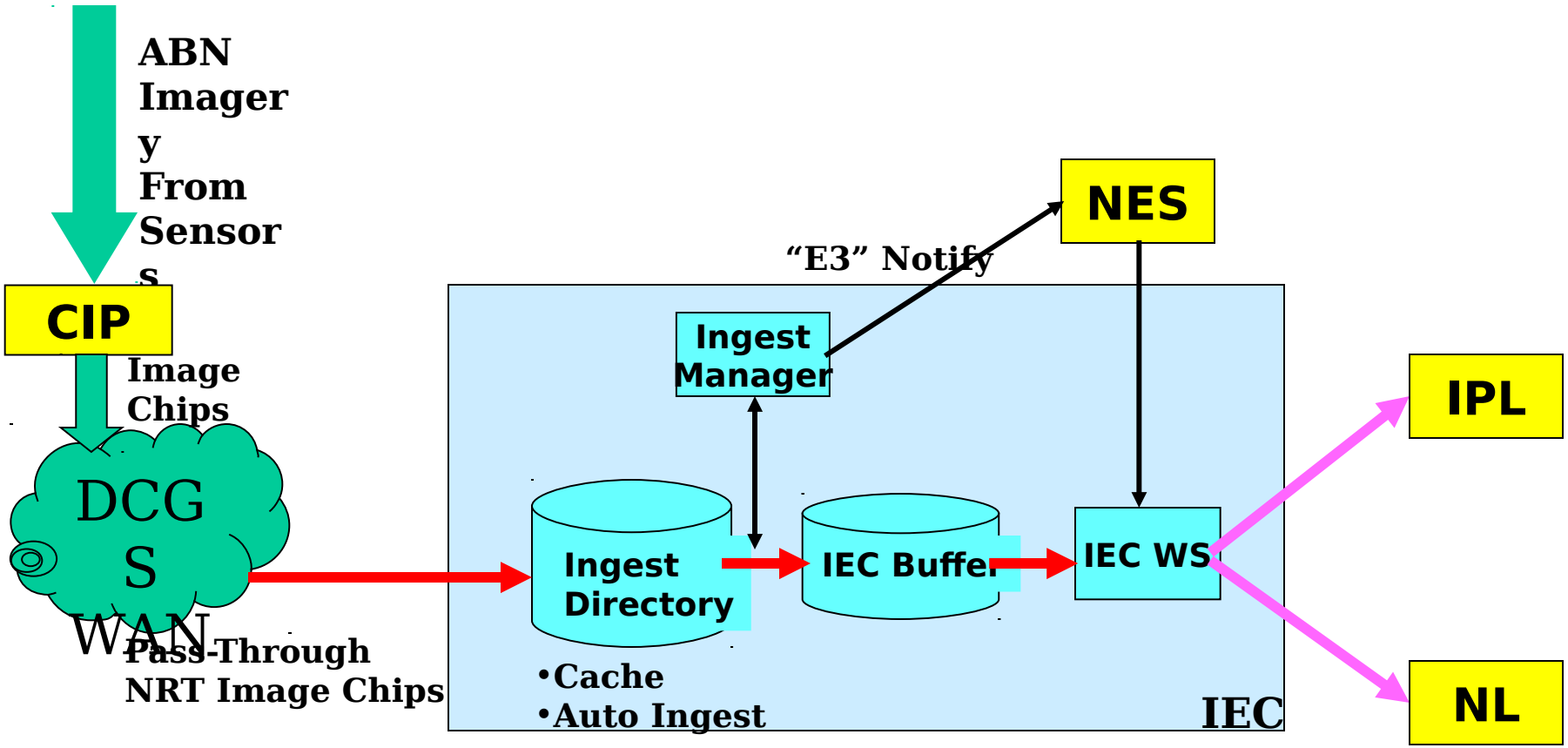
Interface Assumptions

- **Image Data-only interface between DCGS and NSGI; no messages (Right?)**
- **Image Data transferred from the field via FTP-put (push)**
- **Data format: NITF 2.0/2.1, from CIP**
  - **R0 only (no rsets); separate file for screener review if applicable**
  - **Not JPEG2000**
- **Remote site determines what data is sent and the destination based on profiles maintained by DCGS systems (e.g., CIP)**
  - **Different destination host/path based on required processing**
- **Three possible processing paths, destinations**
  - **Near-realtime (NRT), pre-chipped**
  - **Near-realtime (NRT), requiring screening**
  - **Non-near-realtime (non-NRT)**
- **NRT imagery to be reviewed and dispositioned immediately**
- **Non-NRT imagery to be stored in library for later use**
  - **IPL or NL**
  - **No screening involved**

DCGS NRT, Pre-Chipped Data System-Level Flow (Option 1A)



AIN1.0 DCGS NRT Pre-Screened Chips to IEC Data Flow Options -- Option "1A"



LEGEND:

Imagery Flows
Output Products
Control Flow/Msgs

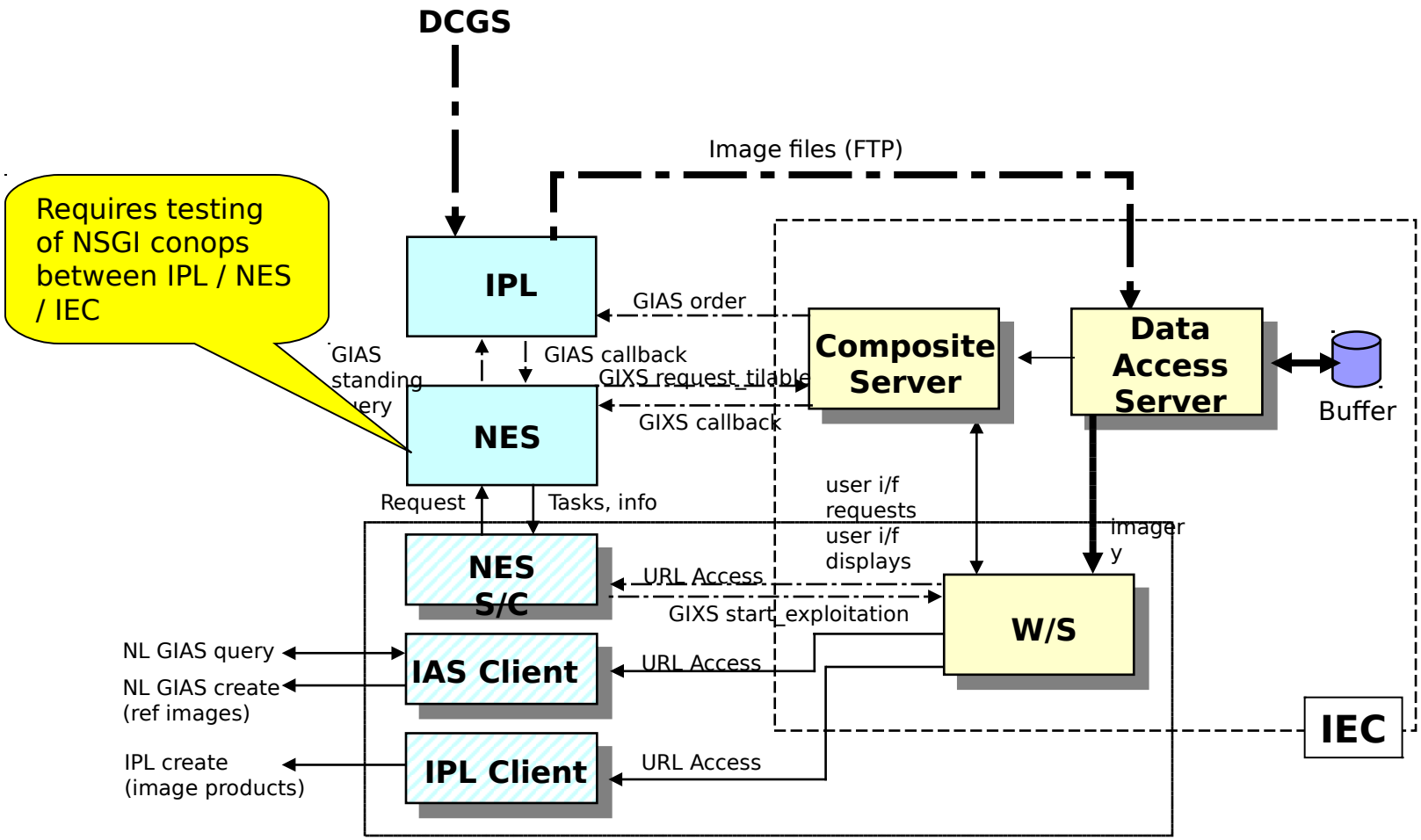
NRT Flow, Pre-Chipped Data (Option 1A)

Transfer to IEC

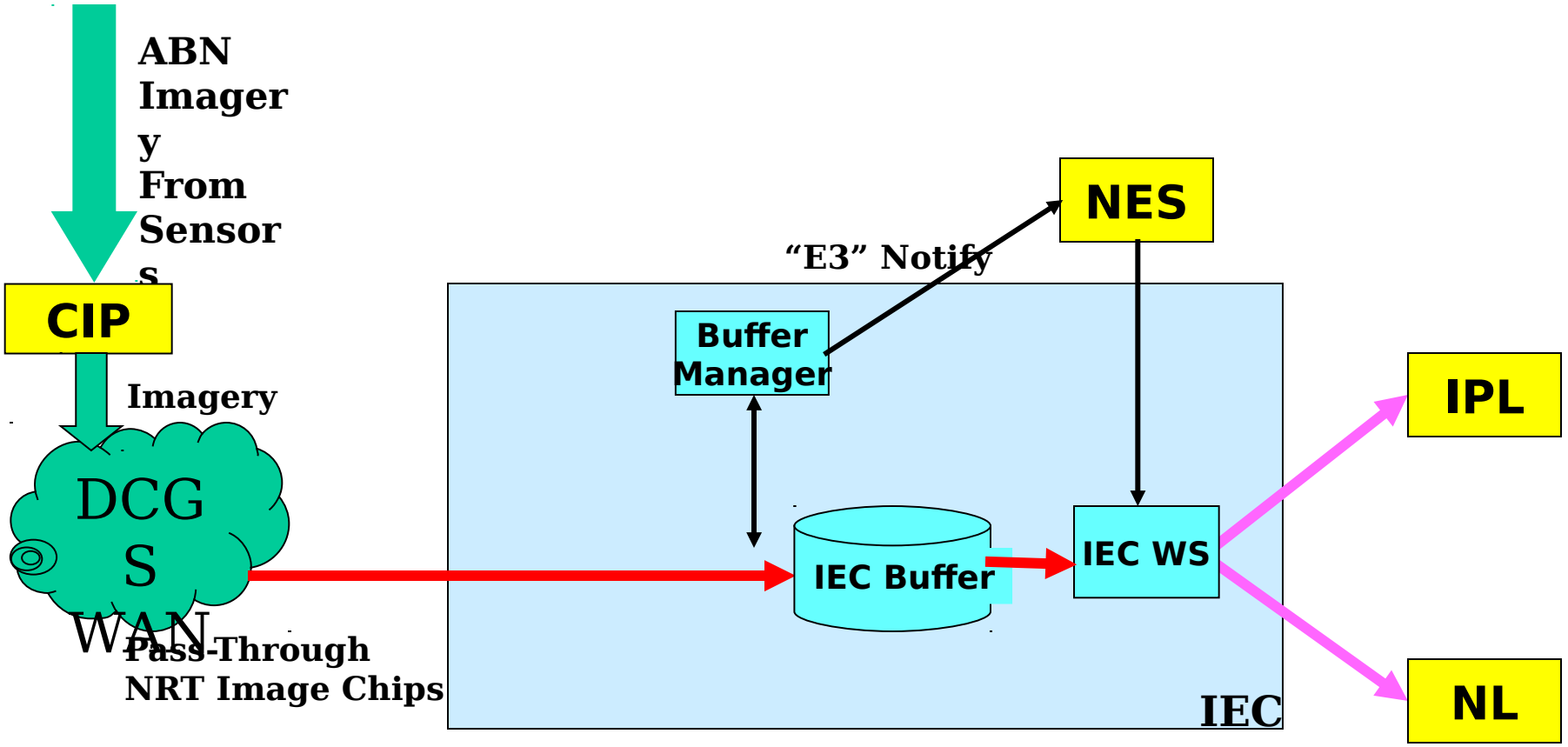
- **Source sends data to IEC ingest directory**
- **IEC ingests data into buffer**
- **(*NES Impact*) IEC notifies NES of ingest to trigger profiled exploitation flow**
- **Analyst accesses image for review**
  - **Ad hoc query against IEC buffer**
  - **Access via NES Softcopy display (if NES notification supported)**
- **Analyst performs reporting, generates outputs**
  - **Image chip could be sent to library for archiving**
- **Image purged from IEC buffer per standard IEC purge criteria**
  - **Assumed that original image chip does not need to be retained in a library**

- **Advantages of direct IEC storage**
  - **Fastest path to exploitation**
  - **Automated cleanup of imagery from buffer**
- **Possible issues with IEC storage**
  - **NES impact to support IEC notification without NL involvement**
  - **Need for more widespread access to original image chip**

DCGS NRT, Pre-Chipped Data System-Level Flow (Option 1B)



AIN1.0 DCGS NRT Pre-Screened Chips to IEC Data Flow Options -- Option "1B"



LEGEND:

Imagery Flows
Output Products
Control Flow/Msgs

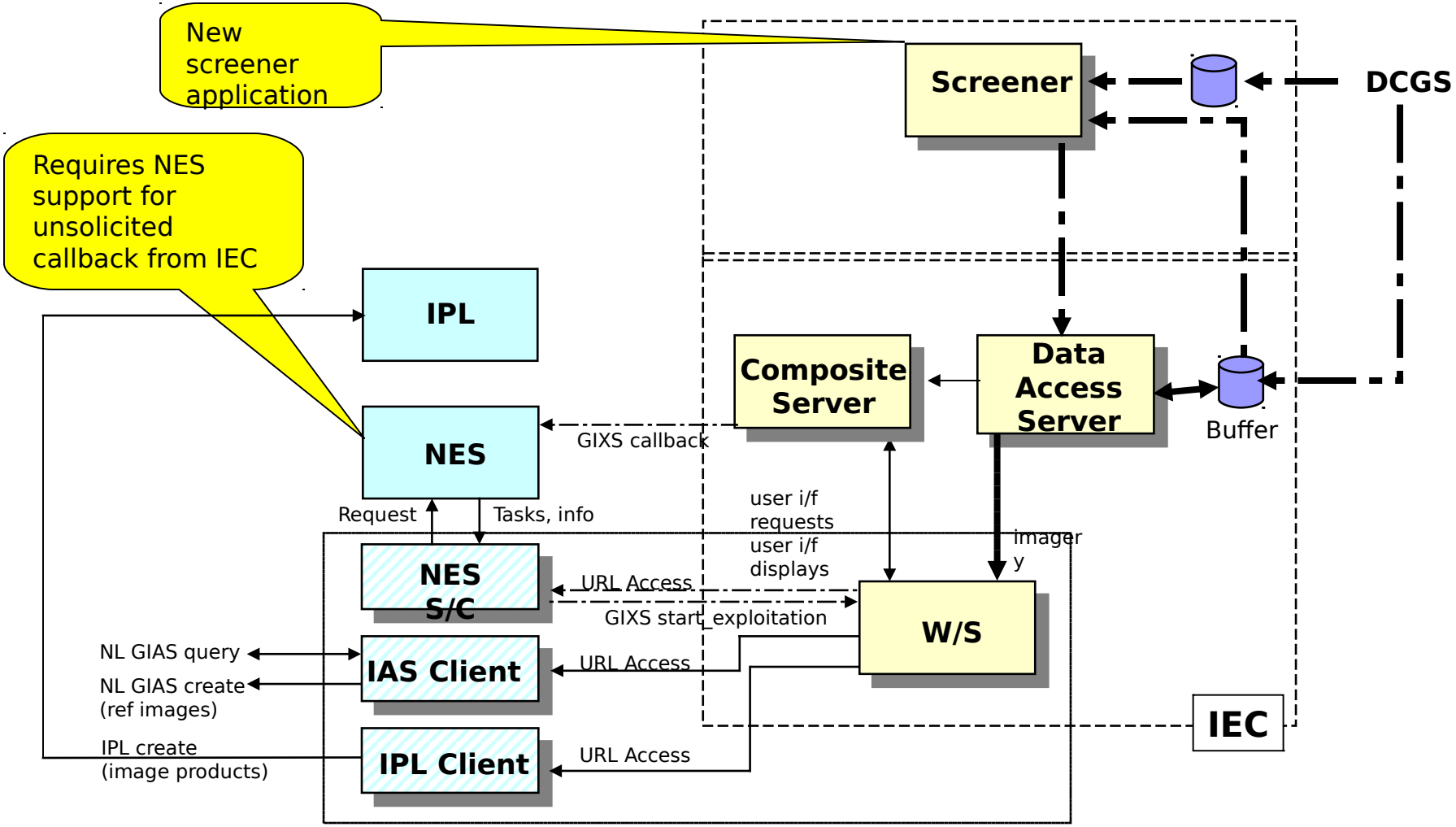
NRT Flow, Pre-Chipped Data (Option 1B)

Transfer to IPL

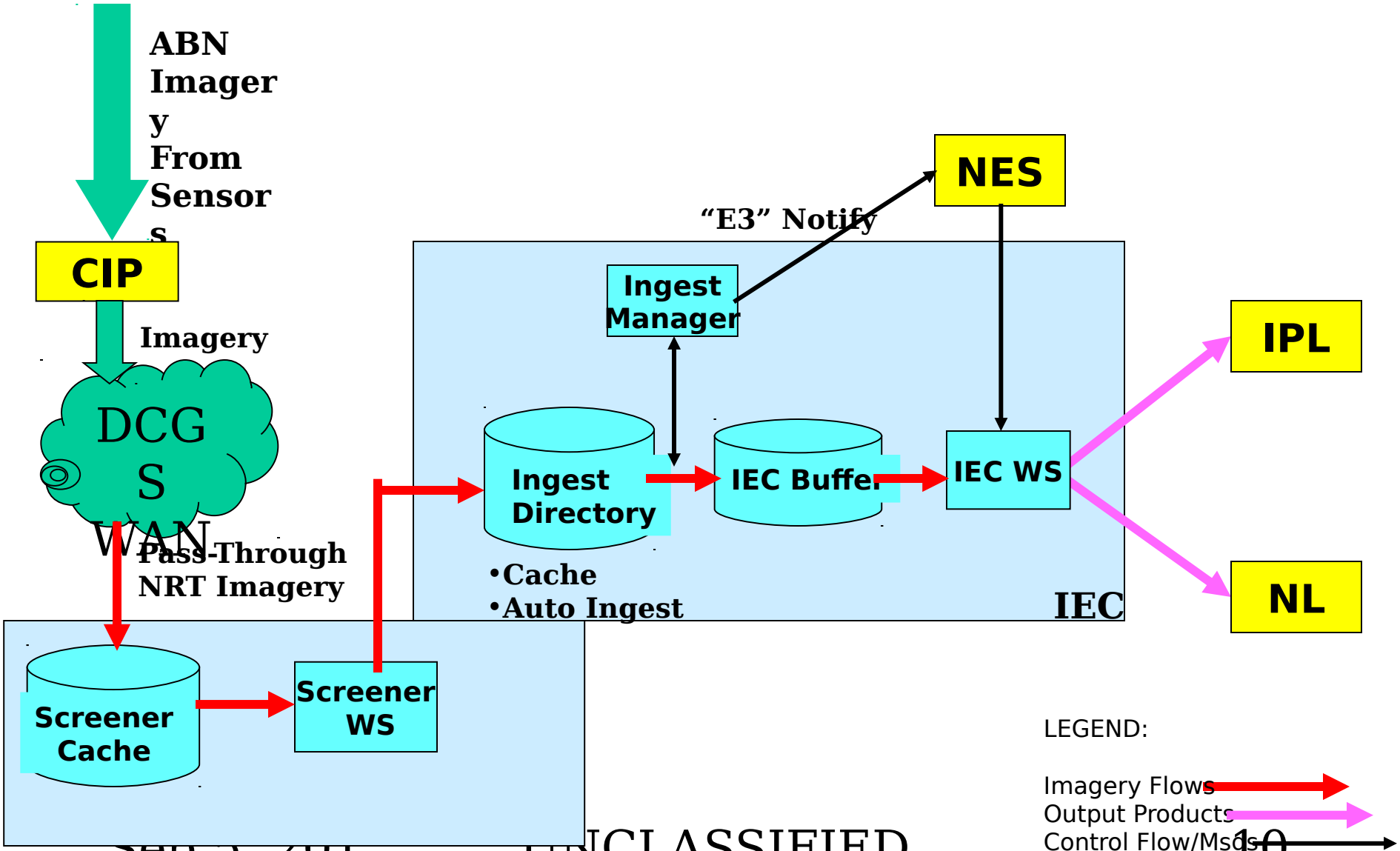
- **Source sends data to IPL auto-ingest directory**
- **IPL ingests data**
- **Alt 1: IPL notifies NES of ingest to trigger profiled exploitation flow (*test impact*)**
  - **Access via NES Softcopy display**
- **Alt 2: Ad hoc query and order against IPL from IEC WS**
  - **Order data to IEC buffer**
- **Analyst performs reporting, generates outputs**

- **Advantages of IPL storage**
  - **Supports wider access to imagery (if appropriate)**
- **Possible issues with IPL storage**
  - **Slower timeline, due to additional steps to store and access imagery**
  - **IPL support for USIGS/NSGI imagery conops**
  - **Imagery cleanup**

DCGS NRT, Screened Data (Option 2A) System-Level Flow



AIN1.0 DCGS NRT IEC Screener Data Flow Options -- Option "2A"



NRT Flow, Screened Data (Option 2A)

Transfer to IEC

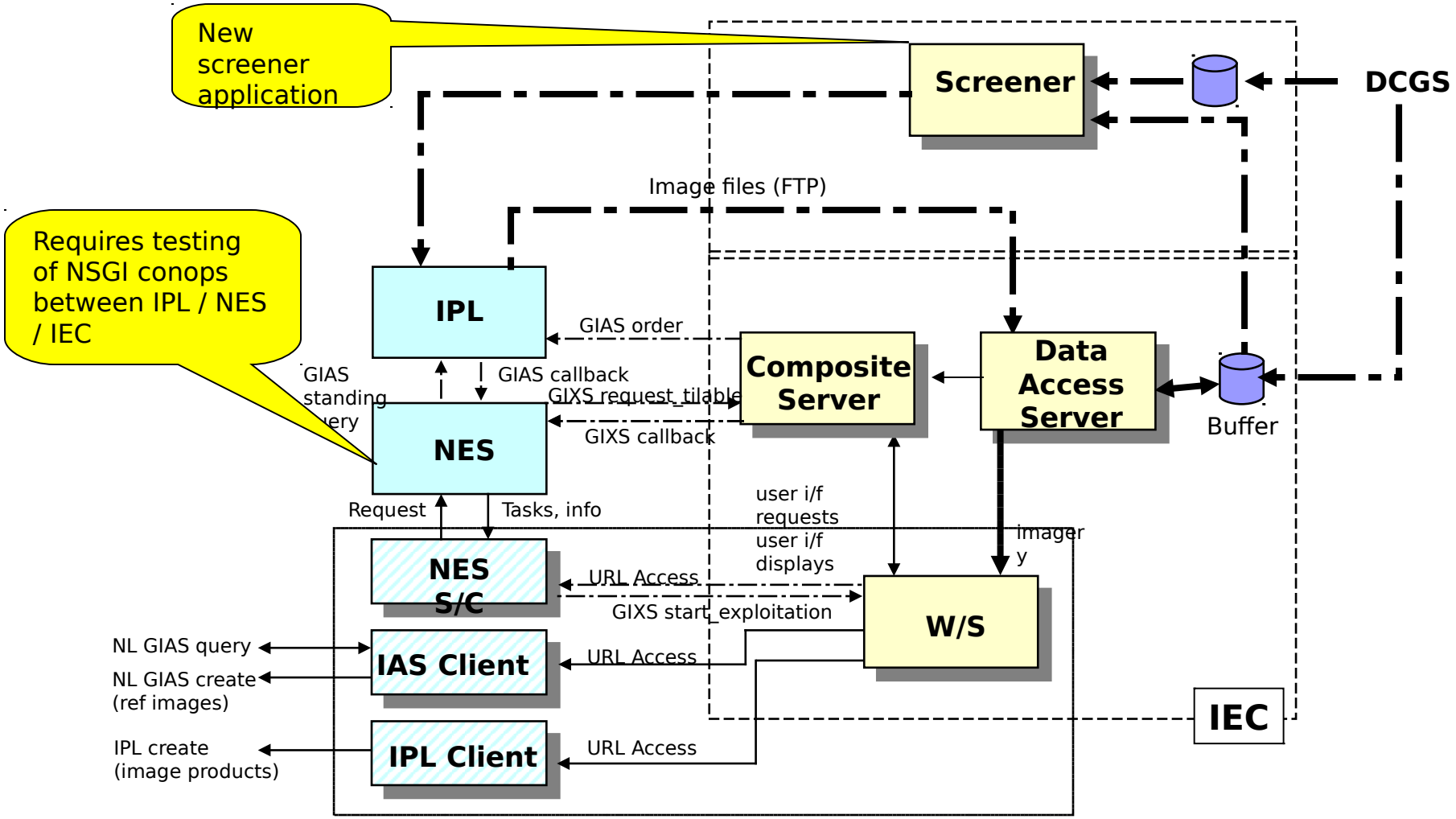
- **Source sends data to temporary cache (*IEC impact*)**
  - **Local WS storage or a partition of the IEC buffer**
- **Analyst runs screener application against cached data (*IEC impact*)**
- **Image chips created and sent to IEC ingest directory (*IEC impact*)**

(continue with same flow as with pre-chipped data)

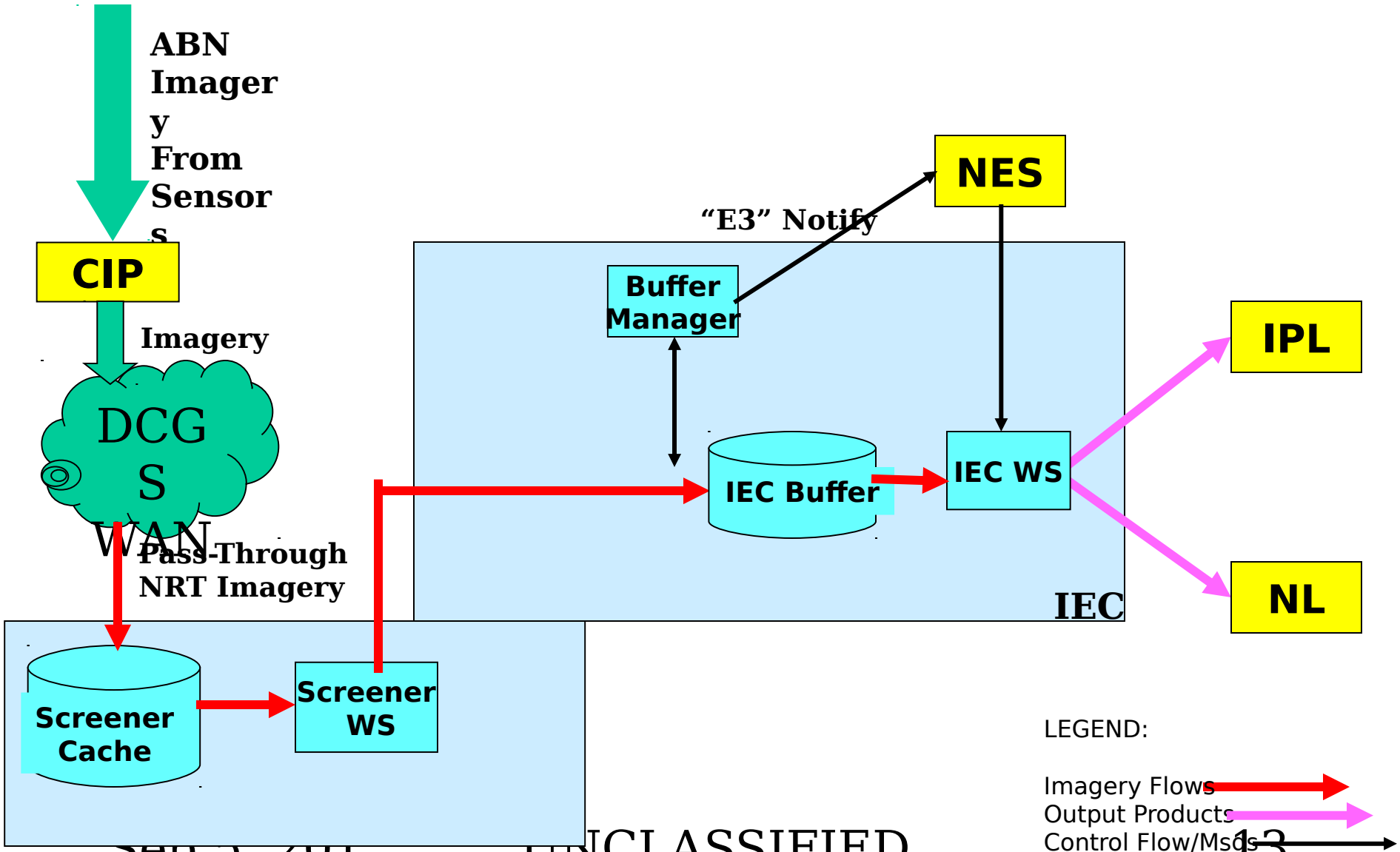
- **IEC ingests data into buffer**
- **(*NES Impact*) IEC notifies NES of ingest to trigger profiled exploitation flow**
- **Analyst accesses image for review**
  - **Ad hoc query against IEC buffer**
  - **Access via NES Softcopy display (if NES notification supported)**
- **Analyst performs reporting, generates outputs**
  - **Image chip could be sent to library for archiving**
- **Image purged from IEC buffer per standard IEC purge criteria**
  - **Assumed that original image chip does not need to be retained in a library**

- **Advantages of direct IEC storage**
  - **Fastest path to exploitation**
  - **Automated cleanup of imagery from buffer**
- **Possible issues with IEC storage**
  - **NES impact to support IEC notification without NL involvement**
  - **Need for more widespread access to original image chip**

DCGS NRT, Screened Data (Option 2B) System-Level Flow



AIN1.0 DCGS NRT IEC Screener Data Flow Options -- Option "2B"



NRT Flow, Screened Data (Option 2B)

Transfer to IPL

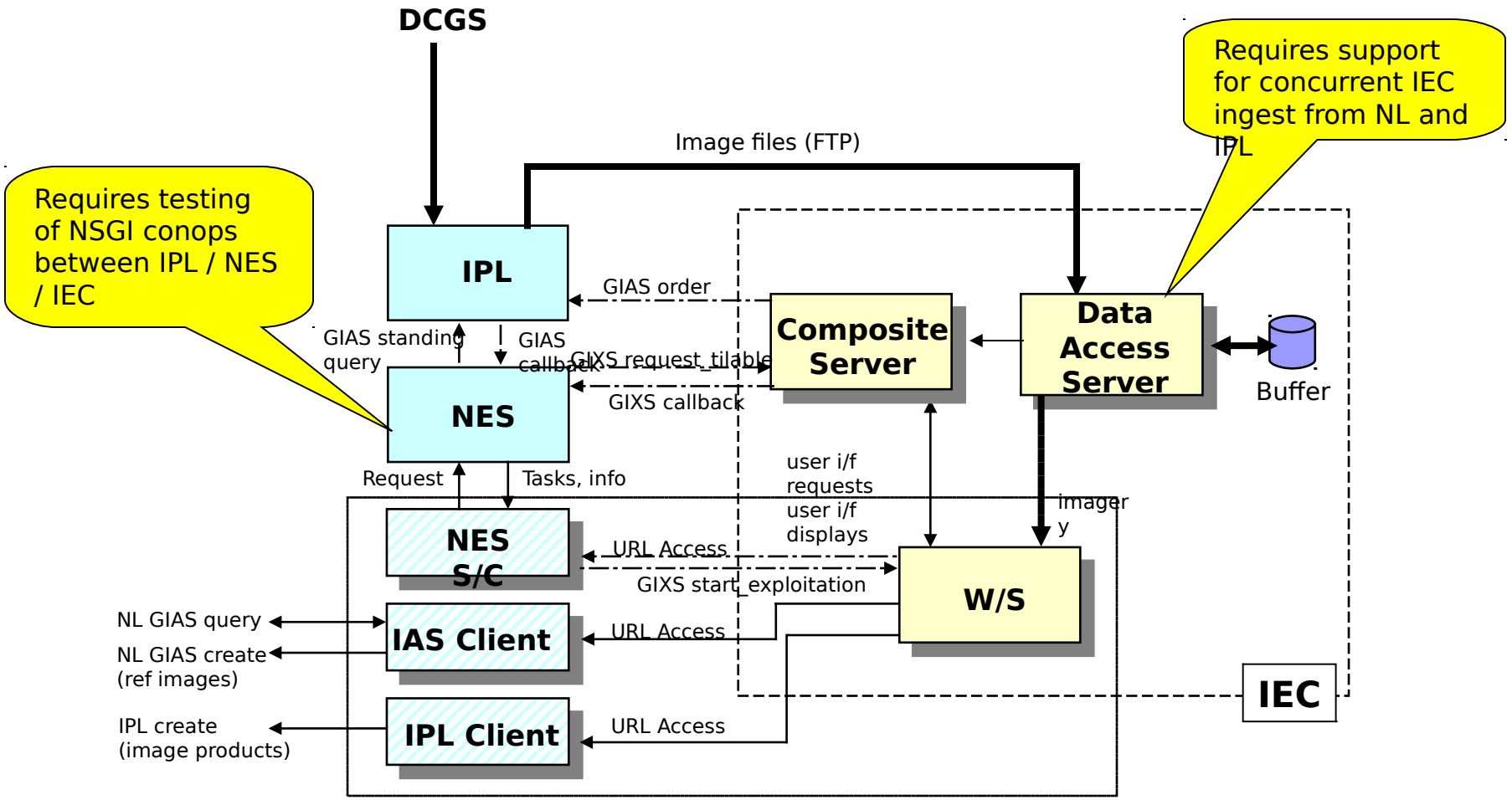
- **Source sends data to temporary cache (*IEC impact*)**
  - **Local WS storage or a partition of the IEC buffer**
- **Analyst runs screener application against cached data (*IEC impact*)**
- **Image chips created and sent to IPL auto-ingest directory (*IEC impact*)**

(continue with same flow as with pre-chipped data)

- **IPL ingests data**
- **Alt 1: IPL notifies NES of ingest to trigger profiled exploitation flow (*test impact*)**
  - **Access via NES Softcopy display**
- **Alt 2: Ad hoc query and order against IPL from IEC WS**
  - **Order data to IEC buffer**
- **Analyst performs reporting, generates outputs**

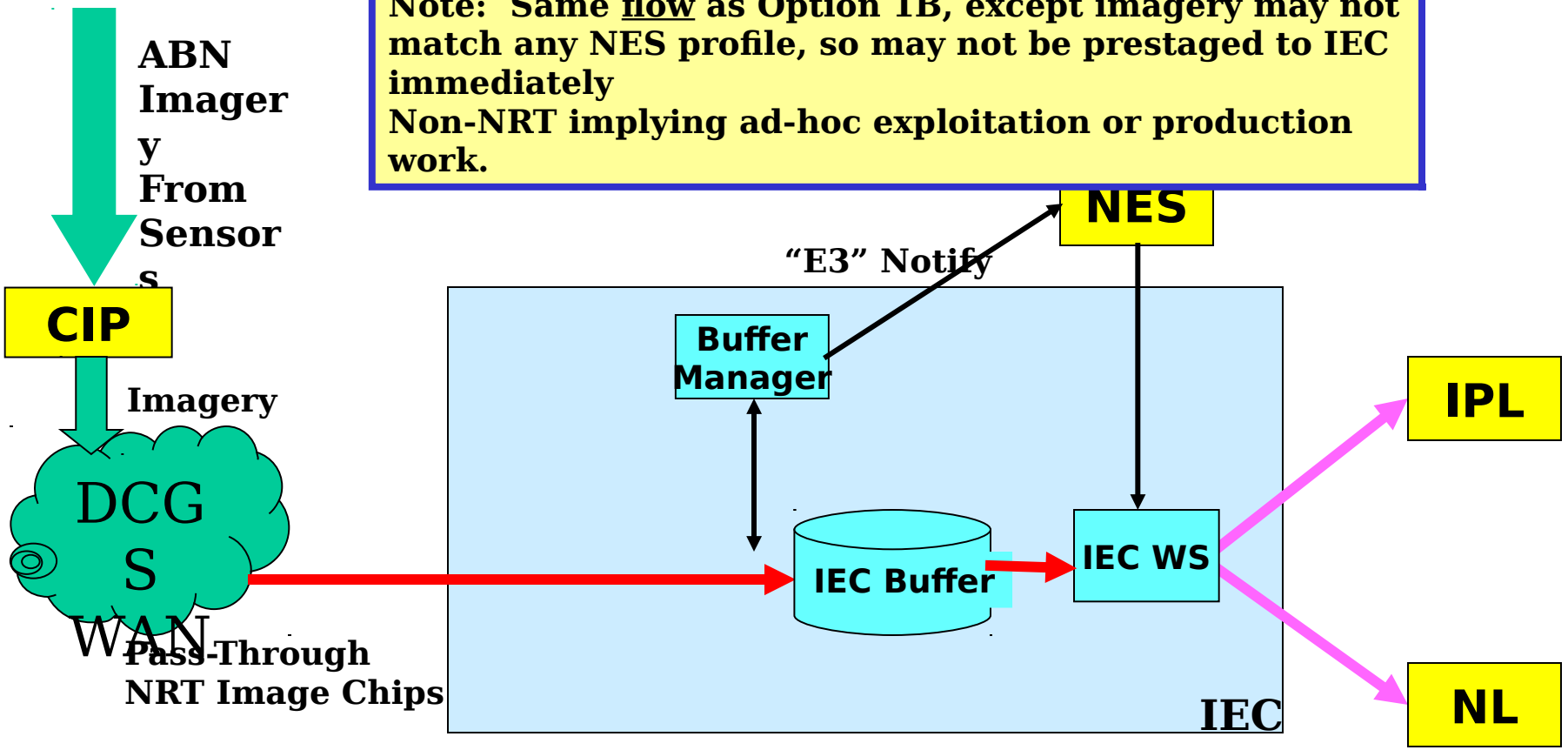
- **Advantages of IPL storage**
  - **Supports wider access to imagery (if appropriate)**
- **Possible issues with IPL storage**
  - **Slower timeline, due to additional steps to store and access imagery**
  - **IPL support for USIGS/NSGI imagery conops**
  - **Imagery cleanup**

DCGS Non-NRT
System-Level Flow (Option 3)



AIN1.0 DCGS Non-NRT Data Flow Options -- Option "3"

Note: Same flow as Option 1B, except imagery may not match any NES profile, so may not be prestaged to IEC immediately
Non-NRT implying ad-hoc exploitation or production work.



LEGEND:

Imagery Flows
Output Products
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Non-NRT Flow (Option 3)

Same flow as Pre-chipped NRT Option 1B (IPL receipt), except imagery may not match any NES profile, so may not be prestaged to IEC immediately

- **Source sends data directly to library ingest cache**
  - **IPL auto-ingest directory**
- **Library ingests data**
  - **Based on standing order profile, IPL could send to NL (IA-CIL)**
- **Alt 1: IPL notifies NES of ingest to trigger profiled exploitation flow (*test impact*)**
  - **(*IEC impact*) IEC accepts concurrent ingest from IPL and NL**
  - **Access via NES Softcopy display**
- **Alt 2: Ad hoc query and order against IPL from IEC WS**
  - **Order data to IEC buffer**

Note: Could send data directly to NL, vs. IPL

- **Advantages of NL storage**
  - **Baseline, tested support for NSGI conops with NES, IEC**
  - **Storage with other imagery minimizes analyst search time**
- **Possible issues with NL storage**
  - **Need for more widespread access**
  - **Support for auto-ingest**
  - **Support for tactical formats (e.g., chipping)**